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ABSTRACT

This study, conducted by a task force that interviewed corporate and campus officials at 10 corporations and 12 universities and colleges during 1994-96, examined how well undergraduate, graduate, and professional students in the United States are being prepared to meet the demands of the modern high-performance workplace. The study found conflicting views. Business leaders saw higher education professionals as being unwilling to change in any time frame, holding narrow views of academic disciplines, failing to consider career needs, expecting support without accountability, and operating inefficiently. Academic respondents, on the other hand, complained that business leaders proposed making major changes in short time frames, provided vague descriptions of the skills they sought in new employees, sent inconsistent messages, failed to understand the difference between education and training, and were too focused on profit. The report offers sample quotes from corporate respondents, people on campus, and recent graduates. It suggests several models for better cooperation between the two sectors. Appended to the report is a list of the Business-Higher Education Forum members. (CH)

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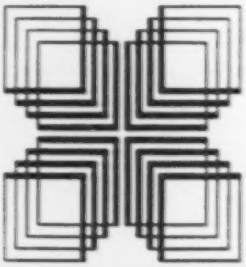
**Task Force on High-Performance Work and Workers: The Academic Connection**



Business-Higher Education Forum

In affiliation with the American Council on Education

# Spanning the Chasm:

# Corporate and Academic Cooperation to Improve Work-Force Preparation

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## Task Force Membership

**Ex-officio**
Harold A."Red" Poling, Retired Chairman of the Board and Chief Executive Officer, Ford Motor Company, and 1994–96 Chairman, Business–Higher Education Forum
Stanley O. Ikenberry, President, American Council on Education

**Co-chairs**
James J. Duderstadt, Former President, University of Michigan
Thomas G. Labrecque, President and Chief Operating Officer, The Chase Manhattan Corporation

**Members**
Myles Brand, President, Indiana University
Philip J. Carroll, President and Chief Executive Officer, Shell Oil Company
Charles M. Chambers, President, Lawrence Technological University
Jack B. Critchfield, Chairman and Chief Executive Officer, Florida Progress Corporation
William H. Cunningham, Chancellor, The University of Texas System
Paul A. Elsner, Chancellor, Maricopa Community College District
Joseph T. Gorman, Chairman and Chief Executive Officer, TRW Inc.
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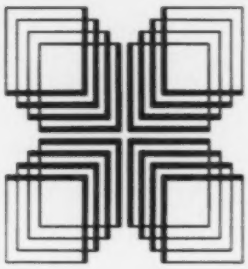
Lawrence A. Hough, President and Chief Executive Officer, Sallie Mae
Peter Likins, President, Lehigh University
Modesto A. Maidique, President, Florida International University
Richard L. Measelle, Managing Partner, Andersen Worldwide
J. Dennis O'Connor, Provost, The Smithsonian Institution
Jack D. Rehm, Chairman, Meredith Corporation
James C. Renick, Chancellor, University of Michigan-Dearborn
Betty L. Siegel, President, Kennesaw State University
Joe B. Wyatt, Chancellor, Vanderbilt University

**Advisor**
Thomas Lynch, Retired Executive Vice President, The Chase Manhattan Bank

Task Force on High-Performance Work and Workers:
The Academic Connection



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Education Forum

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# Spanning the Chasm:

# Corporate and Academic Cooperation to Improve Work-Force Preparation



January 1997

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# Acknowledgments

Ensuring that today's college graduates are prepared to become tomorrow's workers is an effort that will require the cooperation of both the business and higher education communities. As a first step, members of both groups have come together to assist in the production of this report. In particular, the Business–Higher Education Forum would like to thank the following people for their contributions in the preparation of this report:

- Harold "Red" Poling, for providing continual focus since this project began;
- Thomas Labrecque, for his leadership as co-chair of the task force;
- James Duderstadt, for his support in serving as task force co-chair;
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- All interviewees, for sharing their time, opinions, and insightful comments.

Thanks also to everyone who participated in Forum interviews, whether as members of interview teams or as interviewees. Without the help of all of these individuals, this report would not have been possible.

## A Note from Our Chairman

Describing the distance between higher education and business as a chasm may seem to be an overstatement. However, while conducting this study, our Task Force on High-Performance Work and Workers has discovered significant differences in the opinions and attitudes of members of these two groups—groups whose cooperation will be necessary for the nation to move ahead in the 21st century.

During the course of this study, representatives from both sectors agreed that the transition of students from college to the work place needs to be improved. Although views on how best to prepare students for the world of work varied widely, leaders from both business and higher education offered a number of suggestions for improving cooperation between the sectors.

Members of the Business–Higher Education Forum are committed to leading other businesses and higher education institutions in this direction by implementing the recommendations included in this report. While different actions will be effective in various situations, cooperative efforts by business and higher education leaders will help ensure that new employees enter the work force prepared to meet the challenges of today's changing world. We look forward to being able to report on the efforts undertaken by our members in the coming months.

**— J. Dennis O'Connor**

# Introduction

In the spring of 1994, Harold "Red" Poling, Retired CEO and Chairman of Ford Motor Company and 1994-96 Chairman of the Business–Higher Education Forum, established a Task Force on High-Performance Work and Workers. He charged the group with examining how well today's college graduates are prepared to meet the demands of the modern work place.

The task force was co-chaired by Thomas Labrecque, President and Chief Operating Officer of The Chase Manhattan Corporation, and James Duderstadt, then President of the University of Michigan. The task force's scope of interest included education and training needs throughout the corporation—from entry-level positions through middle management to the development of senior corporate leaders—but it focused on the education and training needs of new hires.

Teams of task force members visited ten corporations and 12 higher education institutions in the United States. The teams typically consisted of a corporate and an academic chief executive officer and at least one member of the Forum staff. During site visits, the teams conducted intensive interviews with corporate and campus officials about the work-place preparation of undergraduate, graduate, and professional students.

The corporations, chosen on the basis of their highly regarded education and training programs, included firms specializing in manufacturing, professional services, telecommunications, transportation, publications and retail sales, electronics, and hospitality.[1] The interviews were designed to determine how

corporate leaders perceive the skill levels of new employees, particularly as these skills reflect the employees' educational backgrounds and the corporation's needs.

At every corporation, the Forum team met with the chief executive officer, the director of training, and the head of recruitment.[2] The team also met with other leaders concerned with these issues at most corporations. The results of these interviews were summarized in a September 1995 report, *Higher Education and Work Readiness: The View from the Corporation*.

The campuses, chosen to represent the diversity of U.S. higher education, included public and private, two- and four-year institutions, ranging from small liberal arts colleges to large research universities.[3] The interviews were designed to explore academics' perceptions of work-place needs and to discover whether campus leaders view work-force preparation as a significant academic priority.

On every campus, the teams met with the president, academic and professional deans, small groups of faculty from diverse disciplines and professional schools, and the head of the campus career development center. On some campuses, the teams also met with students, alumni, and local small business owners. The results of these interviews were summarized in a March 1996 report, *Higher Education and Work Readiness: The View from the Campus*.

The task force also was able to draw upon the results of group interviews of recent graduates by five participating employers: The Chase Manhattan Bank, COMSAT Corporation, Ford Motor Company, Shell Oil Company, and Pacific Enterprises. These firms—representing finance, high technology and communications, manufacturing, energy, and public utilities—provided videotapes of group interviews in which recently hired alumni discussed their academic preparation and their introduction to the world of work.

This report integrates findings from these sources, reflects on the meanings of the results, and outlines suggestions for continuing corporate-academic collaboration.

## Highlights and Overview

No matter to whom we talked—whether business leader, academic, or employee—everyone believed that students' transition from campus to work place can be improved.

Today, a chasm separates the academic and corporate worlds. Corporate leaders are convinced that university employees—including administrators and faculty members—do not understand the requirements of the private sector and the need for students to be better prepared for the demands of a changing global economy. Academic leaders are equally sure that corporations have little respect for the campus and that U.S. universities are in fact world class. Recently employed alumni value their college experiences but report that they had too little direction and guidance in choosing and preparing for a career.

The gap between the skills needed in the work place and the education currently provided by colleges and universities can be closed, however, if business and higher education institutions work together. Although business and higher education are two different enterprises with two separate cultures, leaders can improve the transition from campus to work place if they focus on mutually beneficial goals rather than existing differences. To this end, the following report offers recommendations for needed change—actions to be taken first by Forum members and then by other academic and corporate leaders.

**Study Design**

To examine how well today's college graduates are prepared for the demands of the modern work place, teams of task force members (typically a

corporate and an academic chief executive officer and at least one member of the Forum staff) visited ten corporations and 12 colleges and universities in the United States. In three of the cities where higher education institutions are located, Forum interview teams also met with leaders of small and medium-sized businesses. During these visits, the teams conducted intensive interviews with corporate and campus officials about the work-place preparation of undergraduate, graduate, and professional students.

Corporate leaders were asked about their perceptions of the skill levels of new employees, particularly as these skills reflect the employees' educational backgrounds and the corporation's needs. Campus interviews were designed to explore academics' perceptions of work-place needs and to discover whether campus leaders view work-force preparation as a significant academic priority.

The Task Force on High-Performance Work and Workers also was able to draw upon the results of group interviews of recent graduates by The Chase Manhattan Bank, COMSAT Corporation, Ford Motor Company, Shell Oil Company, and Pacific Enterprises. During these interviews, recently hired alumni discussed their academic preparation and their introduction to the world of work.

**Highlights of Findings**

Throughout our interviews, leaders from both business and academe expressed a desire to be better understood by members of the other sector. Leaders in the business sector complained that those in higher education:

- are unwilling to change in any time frame:
- have narrow views of disciplines;
- fail to consider career needs;
- expect support without accountability; and
- are inefficient in their operations.

Meanwhile, higher education respondents complained that business leaders:

- propose major changes in short time frames;
- provide vague descriptions of the skills and knowledge they seek in new employees;
- send inconsistent messages from different parts of the organization;
- fail to understand the difference between education and training; and
- focus too much on profit.

Despite these criticisms, business and higher education leaders share the mutual goal of improving the transition of students from campus to the work place. Corporate leaders explained that today's college graduates are impressive—in most cases as good as or better than their predecessors—but that they are not well qualified to lead in the work place given today's dramatically changing conditions. The problem is not that today's graduates are less skilled than those of previous generations, they said, but that expectations for performance are much higher today than ever before.

Business leaders highlighted several areas in which they believe recent graduates are deficient:

- communication skills;
- the ability to work in teams;
- flexibility;
- the ability to accept ambiguity comfortably;
- the ability to work with people from diverse backgrounds;
- understanding of globalization and its implications; and
- adequate ethics training.

Recently employed alumni generally agreed with business leaders' evaluations of needed improvements in the college experience.

Campus respondents also accepted the corporate characterization of skill deficiencies. However, many explained that they believe there is little they can do to improve the situation. A few notable exceptions were at institutions where presidents and administrators are working with faculty members to change curricula to better meet corporate needs. Nevertheless, many stated that though they are sympathetic to the needs of business, they believe faculty own the curriculum. In fact, the president of a private university said that the institution's board had specifically limited the president's role in developing curricula.

Some faculty members—especially professional school faculty—are committed to preparing students for the work force. Yet, many others—primarily liberal arts faculty members—have little or no exposure to business and are skeptical about the values of the corporate world. Before steps can be taken to better prepare future workers, more business and higher education leaders will need to take an active role in these efforts. No amount of rhetoric will effect change; only the cooperative efforts of all those involved will result in an improved transition of students from campus to work place. Such cooperative efforts must be undergirded by mechanisms for reward and sanction.

Most campus respondents agreed that their students need to be prepared to earn a living after graduation. And business leaders frequently suggested that corporate needs can be satisfied with relatively modest curricular adjustments. Leaders of both business and higher education institutions must work together to continually refine their goals to meet the education and employment requirements of today's global economy.

**Considerations Underlying Change**

Business and higher education leaders must gain a clear understanding of the current situation if they are to close the gaps between work-place needs and

current education practices. During the course of our work, we have discovered several considerations that business and higher education leaders should keep in mind as they begin to implement the recommendations contained in this report.

First, all higher education institutions matriculate large numbers of students who enter the work force. While these students pursue different levels of education (ranging from some coursework to degrees to post-graduate work), the need to prepare them for employment after their college experience is a primary goal of higher education.

Second, many faculty members and some administrators do not consider it appropriate to include business leaders in curriculum evaluation discussions. However, employers' views of students' strengths and weaknesses are invaluable. Before the full range of benefits of employer observations can be realized, however, such doubts need to be addressed. Corporate leaders do not view themselves as curriculum experts, nor do they seek to supplant the faculty in any way. Yet, they do believe it appropriate to comment on the qualities of their new hires—particularly those who are the products of higher education institutions.

Third, faculty are essential to changing the content and delivery of the curriculum. Academic and corporate leaders can—and must—make the case for needed change, but creative faculty members who are convinced of the need to incorporate real-world educational experiences into their courses are the true instruments of change.

Fourth, representatives from business and higher education need to meet regionally to identify the gaps that exist between the needs of the corporations and the education provided by colleges and universities. After these differences have been identified, local leaders—who most likely have a common understanding of the issues facing them and the possible solutions—can work together to close these gaps.

Finally, while all participants in these discussions need to identify specific "next steps," they also should recognize that improving work-force preparation will require ongoing effort. Prescriptive outcomes cannot be determined at the beginning of the process. As business and higher education leaders work together, they will be able to refine their goals and develop strategies to meet the education and employment needs of today's continually changing world. Workplace changes require new ways of working that reinforce the importance of education and training and that depend, in the end, on an academic connection.

**Specific Recommendations**

It is essential that Forum members, as sponsors of this study, take the lead in implementing the recommendations contained in this report. Once members have committed themselves to these efforts, they can lead other businesses and higher education institutions in this direction.

*Recommendations for Forum members:*

- Commit the organization each member leads to take one or more specific steps recommended here and be prepared to report these efforts back to the membership of the Forum.
- Take responsibility for disseminating the findings of this report. Inform others within our sphere of influence about the gaps between corporate needs and new employees' skills.

*Recommendations for Forum members and others:*

- Convene regional groups of leaders from business and higher education to discuss how the issues identified in this study apply to their local areas and which recommendations for action they can implement.

- Establish ways to bring together faculty and corporate leaders so faculty members can learn about businesses' needs and business leaders can see what faculty members already do to prepare students for the work force.
- Identify cooperative practices involving business and higher education that have successfully influenced work-force preparation, and model future programs on successful examples. (See the Business–Higher Education Forum's web page at http://www.acenet.edu/programs/BHEF/BHEF.html for a list of model programs.)
- Acknowledge, through traditional reward structures, the efforts faculty members and corporate leaders already are making to improve work-force preparation.
- Explicitly define the skills and knowledge desired in new employees and analyze the learning experiences that facilitate these characteristics.
- Evaluate efforts to improve worker preparation by asking recently hired alumni how effective they believe their preparation to have been.
- Define the kinds of education and training that are the responsibility of colleges and universities versus those that are the responsibility of the corporation. While larger corporations may be willing to invest in training programs to teach new employees knowledge unique to their firms, small and medium-sized businesses are likely to require more assistance with training.
- When appropriate, include other participants, such as state and local government representatives and officials from non-governmental agencies, in these discussions.
- Ensure that students have access to information about careers and the educational experience needed to be successful in their chosen fields by providing internships, work experiences, and counseling and advisement services.

- Establish more developmental work opportunities and work simulations for students during their undergraduate education.
- Recognize the continued learning needs of employees as curricula are defined and learning opportunities developed.

Both business and higher education can contribute to these efforts. Which sector initiates the conversation is unimportant; what is critical is that representatives from both sides—even those individuals who initially might not consider themselves important players—participate in the process. Efforts to improve the work-force preparation of today's college graduates will not be effective if we "succeed only in changing the enthusiasm of the few rather than the hearts of the many," as Rev. Edward A. "Monk" Malloy, C.S.C., president of the University of Notre Dame, said at a recent Forum meeting.

American colleges and universities are a major resource for preparing the nation to meet the challenges of the future. However, if they do not respond to the changing needs of the business world, corporations will rely more on their own educational systems to train employees. Today, an old challenge presents itself in a new form: Are university graduates prepared to make their way in today's world? In addressing this challenge, we must remember that our colleges and universities have succeeded in the past, and they shall again.

# I: The Stakes Involved

While members of the Business–Higher Education Forum are aware of recently expressed concerns surrounding higher education, their focus is on one particular question: How well are today's college graduates prepared to meet the demands of the modern high-performance work place?

Many distinguished commissions and task forces have examined the connection between school and work; however, virtually all confined their interest to the skills and competencies of high school graduates.[4] Very few have examined the implications of changes in the global economic environment and the modern work place for the preparation of American undergraduate, graduate, and professional students.

**The Changing World of Work**

Throughout its history, the United States has been able to market its goods to the world with little concern about competition from other countries. The quality of American goods and services was good. American production techniques were world class. American "know-how" was the envy of the world. And U.S. markets, isolated by two great oceans, belonged to American producers.

Today, all of that has changed. Virtually everything can be made anywhere and sold everywhere. Telecommunications and modern cargo and transportation systems have created a truly global community. The internationalization of goods means that products can be designed in one place, engineered in another, produced in yet a third place, and distributed around the globe. Finance, capital,

technology, and labor acknowledge no national borders. Consequently, nearly three-quarters of American goods manufactured today are subject to competition from abroad.

These developments create very high stakes for Americans and for the rest of the world. Increasing annual incomes are available to people elsewhere, which allows others to begin thinking in terms of the American dream: Each generation can expect to exceed the standard of living of its predecessor. People in other lands now are beginning to reap the economic benefits once thought to be uniquely American.

These developments also are driving enormous changes in the structure and processes of American business itself. Firms of all sizes are slimming down, trimming overhead, and slashing management layers. Many corporations have moved either production or service support abroad. Since 1970, American corporations have laid off millions of employees; layoffs initially affected hourly workers and supervisors in manufacturing and other industries in the "rust belt" but have extended more recently into the ranks of managers and executives in the banking, finance, service, and high-technology industries thought to be the jobs foundation of the United States for the 21st century.

To compete more effectively, American firms also are decentralizing functions; moving to smaller units of production; breaking down the "silo walls" that separated different units in the same firm (e.g., design, manufacturing, and customer service); and conferring greater autonomy on newly liberated teams of managers and employees that are expected to perform at higher levels, both individually and collectively.

Meanwhile, technologies—and the processes in which they are embedded—are becoming ever more important in the American work place. These are the processes and systems that permit manufacturers to design and test airplanes

by using computer simulations rather than by building prototypes; that allow automakers to cut costs with new assembly-line approaches and "just in time" inventory procedures; that let financial institutions monitor and approve billions of transactions involving millions of accounts around the world daily; and that allow members of the public, wherever they find themselves, to obtain cash from their accounts. In short, these processes and technologies undergird and support much of the day-to-day life and business activity Americans take for granted.

**The High-Performance Work Place**

These changes have taken place with such bewildering speed that it is difficult to understand their causes; it is equally difficult to discern the opportunities they present. However, underlying the changes in technology and competition is a global economic transformation that depends on human skill. In this new environment of changed markets, products, and processes, successful firms depend on the one factor that other corporations cannot easily duplicate: their human resources. As one CEO told the Forum:

> *How do you differentiate yourself in this market? The product is the same. Price? The same. Quality? The same. The only way to get an advantage is through the quality of your people.*

"

High-performance work places are a function not only of technology, but also of the human resources that created it and that make it possible to reap its benefits. Work-place changes require new ways of working that reinforce the importance of education and training and that depend on an academic connection.

The easiest way to understand this new world of work and the dynamics of the modern work place is to contrast it with the "traditional" work place (Table 1).[5]

**Table 1**
**Characteristics of the New World of Work and the Old**

| Traditional Work | High-Performance Work |
|---|---|
| **Markets** | |
| Limited Competition | Global Competition |
| Standardization | Customization |
| Unlimited Resources | Limited Resources |
| Regulation | Deregulation |
| **Corporate Characteristics** | |
| Mass Production | Small Lots |
| Hierarchies | Teams |
| Large Bureaucratic Organizations | Smaller Flexible Organizations |
| Integrated Companies | Outsourcing |
| Homogeneous Work Force | Diverse Work Force |
| **Employee Implications** | |
| Brawn/Metal-Bending | Brains/Mind-Bending |
| Job Security: Seniority | Job Security: Skills |
| Job-Specific Skills | Broad Skills |
| Careers Built with One Employer | Careers Built in One Occupation |
| Benefits Tied to Employer | Portable Benefits |
| Pay for Time Served | Pay for Performance |
| Finite Education | Lifelong Learning |

As the comparisons in Table 1 make clear, today's high-performance work place operates in markets that are a paradox: increasingly global and, at the same time, fragmented and segmented. In this new world, customized products are displacing those that formerly competed on the basis of economies of scale.

Meanwhile, downsized corporations are remodeling themselves from large bureaucracies emphasizing order, hierarchy, and standardization into high-performance organizations emphasizing quality, precision, and reliability. These

are smaller entities that "outsource" much of their routine work and emphasize flexible production, fast turnaround, cooperation, and teamwork in a diverse work force. For individual workers, brains, know-how, broad skills, and the willingness to learn throughout life have become the essential tools for building a career in which work with a single employer will be the exception, not the rule.

**Old Certainties Eroding**

In short, all of the old verities about work are now under review. It is not simply that the globe is spinning faster, forcing employers and employees to speed up just to remain in place. Rather, it is that earthquakes have occurred, causing the ground underneath to fall away and exposing new skill requirements. In this environment, it is reasonable to ask, "How well are the nation's colleges and universities preparing their graduates for this new work world?"

No one to whom we talked—business leader, academic, or employee—is entirely satisfied with the transition of students from campus to work place. Corporate leaders are convinced that students are not being prepared to move confidently into today's fast-moving global business environment. Yet, academic leaders, facing multiple demands, do not see themselves as key agents in curricular change, especially in light of sometimes hostile faculty. Recently employed alumni, meanwhile, are ambivalent. They emphasize that college was a "superior" learning opportunity that helped them develop a "toolbox of tools" to succeed, learn, and grow in the world of work.[6] But many also complain about poor preparation in a number of areas—particularly the lack of practical, hands-on business experience among faculty and severe deficiencies in career guidance and counseling. As the following chapters explain, colleges and universities are doing a better job today of preparing students for the work world than in the past, but they also can do a much better job.

# II. The View from the Corporation

Discussions with campus officials, corporate leaders, small business owners, and recently employed alumni revealed a rising tide of dissatisfaction with the academic preparation of today's graduates. This dissatisfaction was most readily evident in interviews with corporate leaders and recently employed graduates, but it was conveyed by campus personnel, as well.

**The Corporations**

As noted earlier, the ten corporations involved in these discussions represent a diverse group of American employers. They include manufacturing and service enterprises, ranging from heavy industry to high technology, from professional services to convenience foods, from transportation to banking. The corporations annually hire between 300 and 549,000 people in the United States.

The diversity of the ten corporations extends to the types of employees hired, as indicated in Figure 1. As it highlights, some firms employ approximately equal proportions of salaried managers (typically college graduates) and hourly employees but very few salaried non-managers (typically specialists, such as scientists or systems engineers). In other firms, most employees are salaried non-managers; still other corporations primarily hire hourly employees.

**Impressive Graduates: The Cream of the Crop**

What do these employers have to say about the quality of the graduates they hire? Initially, corporate leaders were generous in their assessment of recent graduates. With few exceptions, corporate leaders agree that today's new hires

have impressive academic skills; today's graduates are at least as good as their predecessors and perhaps better. The following comments are typical of those made by corporate leaders regarding their new hires:

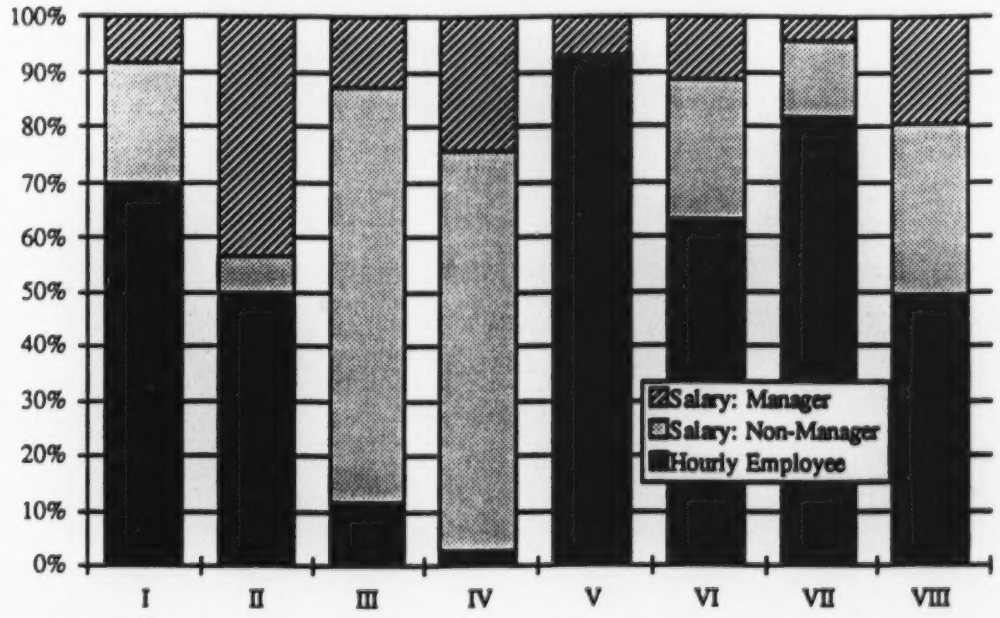
> *I meet annually with our new people. They are a lot smarter than the crowd that was hired with me!*
>
> **— CEO**

> *We have good data on this. Over 25 years, our testing data indicate no declines in verbal, quantitative, or reasoning ability.*
>
> **— Manager of recruiting**

> *I got an MBA at the university 25 years ago. The MBAs I am hiring from here now can run rings around me in terms of analytical and quantitative skills.*
>
> **— Small business CEO**

**Figure 1**

**Percentage of Work Force in Each Employment Category**




**Source:** Data provided by eight of ten participating corporations; two companies were unable to provide complete data and hence were not included in this figure.

Employers' satisfaction stems at least in part from their selective hiring practices; they are able to choose top-quality graduates for available positions.

> *We can 'cream' each graduating class. We wind up making an offer to one of every 14 people we interview.*
>
> **— Manager of recruiting**
>
> *We recruit for the most part at the top business schools.*
>
> **— Manager of training**

**Second Thoughts**

After reflecting a bit longer, however, corporate officials began to voice a series of concerns. Today's corporations, they noted, are leaner and more productive than a generation ago; they are flatter, less hierarchical, and more focused on quality and customer satisfaction. A corporation netting the same results in 1996 as in 1970 would be far behind the times. Similarly, universities are victims of their own success: They are trapped in a discipline-bound view of knowledge and are now behind the curve.

In today's competitive environment, college graduates need to be much better qualified than ever before if their employers are to respond effectively to the pressures of the global economy. As corporate leaders considered these new demands, they identified numerous deficiencies in the preparation of graduates.

Specific deficiencies mentioned in Forum interviews include:

**— communication skills;**
**— the ability to work in teams;**
**— flexibility;**
**— the ability to accept ambiguity comfortably;**
**— the ability to work with people from diverse backgrounds;**
**— understanding globalization and its implications; and**
**— adequate ethics training.**

This list was consistent both among and within companies—that is, CEOs, recruiting managers, and training directors tended to identify the same problem areas. Typical corporate comments were as follows:

> *Today's graduates know nothing about the art of leadership or the science of management because nobody on campus understands these things either.*
>
> **— CEO**

> *People fail here for behavioral reasons, not for lack of skills. Openness to change is the single attribute with the greatest relationship to managerial success here.*
>
> **— Vice president**

> *I think deficiencies in composition, reading, writing, logic, and clarity of thought processes are becoming more pronounced. Graduates are not strong in influencing, negotiating, listening, teaming, and interpersonal skills.*
>
> **— CEO**

> *I don't think these kids are any better or any worse.... It is just that our expectations for what they will be able to do are so high today.*
>
> **— Training director**

Such comments correlate well with the results of a 1995 mail survey conducted by the National Association of Colleges and Employers (NACE) (Table 2).[7] The survey asked 259 employers to rank the importance of a list of skills employers seek in college graduates. The major deficiencies identified in Forum interviews—the ability to communicate orally and in writing, interpersonal and leadership skills, the capacity to contribute to and participate in teams, analytical ability, and adaptability—also received high ranking in the NACE survey.

**Table 2**
**Skills Employers Seek in College Graduates**

| Desired Skills (NACE Mail Survey) | Rating* |
|---|---|
| Oral Communication Skills | 4.7 |
| Interpersonal Skills | 4.6 |
| Teamwork Skills | 4.5 |
| Analytical Skills | 4.4 |
| Flexibility | 4.3 |
| Leadership Skills | 4.2 |
| Written Communication Skills | 4.2 |
| Proficiency in Field of Study | 4.2 |
| Computer Skills | 4.1 |

* Average employer rating of importance of skill on a scale of 1 to 5, where 1 is "least important" and 5 is "extremely important" (259 employers responding).

**Source:** National Association of Colleges and Employers, November 1995.

Three additional items—the lack of understanding needed to work with a diverse work force at home and abroad, the need for further ethics training, and the inability to adapt to rapid change—were identified only in Forum interviews, suggesting that these characteristics may be more important in large firms than in the smaller businesses surveyed by NACE.

In meetings with Forum interview teams, leaders of small and medium-sized businesses in three cities where higher education institutions are located expressed concerns about employee deficiencies that were similar to those voiced by leaders of larger firms. However, leaders of smaller businesses were less likely to discuss the need to work with diverse groups or to respond to a rapidly changing environment. Instead, leaders of smaller businesses tended to be more concerned about specific skills.

**Unacceptable State of Affairs**

The views expressed by corporate leaders clearly indicate that a gap exists between the skills mastered by students during college and those deemed most important by their future employers. However, this gap can be closed. To ensure that new employees are able to meet work-place needs, some companies have developed their own corporate training programs, while others have begun to recruit experienced individuals rather than recent graduates.

> *We do not think in terms of hiring college graduates as opposed to hiring non–college graduates. We think of their ability to do the job.*
>
> **— Manager of recruiting**

> *This is not a religious exercise. Training costs us hundreds of millions of dollars a year.*
>
> **— Corporate manager**

> *At one point, about 80 percent of our new hires were recent graduates.... Now it is about 30 percent. Part of it is that our business diversified dramatically, and we needed experienced people in new lines of business fast. Part of it is that we don't like the fact that recent graduates need training.*
>
> **— CEO**

> *We spend about 200 million dollars annually on training, over and above the salary costs for participants.*
>
> **— CEO**

Businesses are willing to invest in training programs that teach workers information unique to their particular corporations, but leaders—particularly those in small and medium-sized firms—emphasized that they rely on colleges and universities to lay the foundation of undergraduate education. Although these

leaders made it clear that they have neither the inclination nor the expertise to suggest comprehensive curriculum revision, they insisted that the current state of affairs is unacceptable and that many of the skills and abilities they seek can—and should—be taught on campus.

Indeed, they frequently suggested that corporate needs can be satisfied by making relatively modest curricular adjustments. They insisted that the individual competition prized on campus works at cross purposes with the cooperation and teamwork expected in the corporate world; with very little difficulty, universities could offer cross-disciplinary or "capstone" courses to help teach students the rudiments of leadership and teamwork. Corporate leaders also stressed repeatedly—sometimes acerbically—that there is no excuse for graduates who cannot communicate effectively and tersely. Corporate leaders reported that though they would prefer to work with higher education representatives to close training gaps, they will be obligated to rely more on their own education systems if colleges and universities do not do a better job of responding to their needs.

## THE VIEW FROM THE CORPORATION

In the ten corporations we visited, business leaders communicated a perception that higher education does not take the needs of the private sector seriously. Moreover, given the intensity of global competition, it is behind the curve—unable to respond quickly and trapped in a discipline-bound view of knowledge.

Corporate leaders believe:

- recent graduates are impressive; in most cases, they are as good as or better than their predecessors;
- their firms hire the "cream of the crop";
- recent graduates, nevertheless, are not well qualified to lead in the midst of dramatically changing conditions; and
- graduates are deficient in areas such as:
  - — communication skills;
  - — the ability to work in teams;
  - — flexibility;
  - — the ability to accept ambiguity comfortably;
  - — the ability to work with people from diverse backgrounds;
  - — understanding globalization and its implications; and
  - — adequate ethics training.

Recent graduates are believed to be good, though they could be better. The problem is not that they are worse than they used to be but that expectations for performance are much higher today than ever before.

Whatever their positions, respondents from the business sector expressed a near universal urge to be better understood by members of the academic community and to have more opportunities to explain what they are doing and why it is important.



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## III: The View from the Campus

On campus, a similar sense of dissatisfaction is apparent, though it is expressed quite differently than in the business world. Reactions to change often were consistent throughout the business community, whereas campus responses to change have produced dissension in the higher education community.

**Presidents and administrators**, occupied with fiscal resources and governance issues, worry that corporate leaders do not appreciate the complexity of the academic enterprise. While they are sympathetic to the needs of business, many believe that curriculum change is the primary responsibility of the faculty.

> *Society expects us to do a lot of things. We support the research on which business depends. We develop new scholars. Our medical schools save lives. Career preparation is just one of the things we do.*
>
> **— President, public university**

> *Fundamentally, the purpose of this institution is to prepare students to work—work may be in places other than business, such as health care, but business is very important.*
>
> **— President, private university**

> *The world of education is not separate from the world of work.*
>
> **— President, private college**

> *There's a whole body of students (outside the professional schools) for whom we have lost adequate ways to assess how well prepared they are for the world of work.*
>
> **— President, public university**

> *We're training and educating people for economic participation, and the sooner we (educators) realize that, the better we'll do the job.*
>
> **— President, community college**

Faculty, a group that is further divided by discipline and by level of familiarity with business, represent another facet of institutions. **Liberal arts faculty**, who often have little contact with business personnel, are inclined to insist that job preparation is not their concern, that the university was created as an independent critic of the larger society, and that the life of the mind need not be sullied by the world of commerce and finance. Many representatives of this group were skeptical about the corporate world, and some were openly hostile to it. Sample comments include:

> *[Many of my colleagues feel] that anything that had anything to do with industry was a sell-out, tainting your work.*
>
> **— Biology professor**

> *[Some faculty feel] the business world is not a place where a nice person would want to be.*
>
> **— Administrator, liberal arts college**

> *This entire state has been devastated by corporate downsizing. Some of my students have watched their fathers lose their jobs after 30 years with the same company. People are very skeptical of the corporate world right now.*
>
> **— Faculty member, public university**

**Professional school faculty**, however, tend not only to be sympathetic to the needs of business, but at many institutions, they also have made substantial curriculum modifications in response to such needs.

*Our entire program is developed in conjunction with the profession. In professional education, we interact with the field to define adequate undergraduate and graduate preparation.*

**— Professional school dean**

*All our concentrations are market driven. There have to be jobs at the end of it.*

**— Associate dean of professional school**

Faculty members and administrators share a concern that "education" not be confused with "training"—that is, they agree that educating students for a broad range of career opportunities may be a useful and legitimate academic function but that training for a specific job, or a specific industry, is not the purpose of a four-year college or research university.

*The job of the college is not to prepare people for business. It is to prepare people for meaningful work. Jobs change.*

**— President, public college**

*We're trying just as hard as [business leaders]. We are teaching our students for a lifetime, not for a specific task. If we fail at all, it is in the direction of training more than educating....*

**— Associate dean of professional school**

*When people leave here to become programmers, they won't remain programmers forever. We have to prepare them for a career, for a lifetime of change, not for one job.*

**— Department chair, liberal arts college**

Business leaders agreed that a broad education emphasizing flexible skills is essential in today's rapidly changing world because learning does not end when students receive their diplomas; rather, education is a continuous process.

> *[Employees] must have a thirst for continuous learning. They won't do one job; they will do a whole range of jobs. They must stop doing things in old ways. They must be ready for change.*
>
> **—CEO**

**Academic Self-Assessment**

How do academic officials—presidents and chancellors, administrators, placement officials, and faculty members—assess their efforts to serve the needs of employers, both public and private? What was most striking about our campus interviews was the extent to which respondents throughout academe, from presidents to liberal arts faculty members, accepted the corporate characterization of graduates' deficiencies in skills such as communication.

> *I don't find anything terribly surprising in this list. Our faculty complain about the same things in their graduate students.*
>
> **— Associate dean of engineering**
>
> *That is the same list that a group of graduate deans developed about 20 years ago. They are identical. The problem, of course, is that curriculum is not constructed around these issues.*
>
> **— President, public university**
>
> *The list looks about right to me. Our graduates can communicate and write and speak. They follow a liberal arts program that requires weekly writing and participation in seminars. Elsewhere, the liberal arts exist in name only. Everything is impersonal. Classes are too large. Multiple choice tests replace essays.*
>
> **— Department chair, liberal arts college**
>
> *We do a better job in ensuring that technical people are literate than we do ensuring that liberal arts students are numerate.*
>
> **— President, private university**

Surprisingly, however, faculty appeared unperturbed by this criticism, laying the responsibility for these deficiencies elsewhere. Most were content to blame the English department; those in the English department blamed the first-year English teachers. When all else failed, many ascribed the deficiencies to the poor preparation of many of the high school students entering their programs. Very few individual faculty members had the fortitude to suggest in the presence of their peers that the faculty as a whole had a responsibility to ensure that graduates could communicate effectively; when they made such a suggestion, it was to the visible discomfiture and disapproval of their colleagues.

**The Need for Dialogue**

A common theme emerged from the campus interviews. Like their corporate counterparts, academic presidents, administrators, and faculty leaders and members expressed a nearly universal desire to be better understood by members of the private sector. Although it was difficult to initiate some of these conversations on campus (faculty attitudes ranged from intrigued, cooperative, and supportive to suspicious, disinterested, and passively aggressive), virtually every member of the academic community eventually acknowledged two things: first, students must be prepared to earn a living; second, continuing dialogue with the business community would be useful—both to better understand what the private sector needs and to explain what higher education is doing and why it is important. As business and higher education leaders discuss work-force and educational needs for the future, they can build the understanding and mutual respect that appear to be lacking today.

## THE VIEW FROM THE CAMPUS

On each of the 12 campuses visited, attitudes ranged widely. Presidents and two-year and professional faculty and staff typically were more attuned to business needs than four-year or liberal arts faculty. In general, the greater the opportunity to work with representatives of business, the greater the sympathy toward the needs of the private sector and the greater the perceived responsibility to help meet such needs.

The attitudes of presidents, liberal arts and professional school faculty, and placement directors demonstrate the diversity of views within the academy:

- Presidents are positive in their attitudes toward business, spend significant amounts of their time addressing financial concerns, and encourage curricular change but do not see themselves as initiators of it.
- Liberal arts faculty are more likely to be hostile to business, believe strongly in the value of liberal arts, and frequently agree that students are deficient in basic skills (such as communication). They tend to place the responsibility for such deficiencies elsewhere.
- Professional school faculty are more committed to preparing students for the work force, are more willing to change academic offerings in response to professional directives, and frequently work with advisory groups and outside experts to rethink academic offerings.
- Career service (placement) directors interact frequently with corporate recruiters, understand and sympathize with corporate needs, and appear to have few opportunities to work directly with faculty.

Whatever their position, academics express a nearly universal urge to be better understood by the business community and to have more opportunities to explain what they are doing and why it is important.

## IV. Employees' Perceptions

What about the views of recent graduates? What are their perspectives on these issues? To explore these questions, five Forum corporate members—The Chase Manhattan Bank, COMSAT, Ford Motor Company, Shell Oil Company, and Pacific Enterprises—organized group interviews of graduates hired within the past five years. During these interviews, employees were asked to discuss the value of their academic experiences.

The employees—approximately half of whom had majored in business or engineering—offered mixed perspectives amounting to both good and bad news for academic leaders. Many alumni viewed their undergraduate experience as powerful and essential to their success to date. However, most of them also suggested that their education would have been more useful if their colleges had done a better job teaching skills needed in the work world.

### The Good News

The interviews revealed that the undergraduate years provide a "superior opportunity" that helps prepare "virtually all graduates for the requirements of the work place." When asked about the costs and benefits of their college educations, employees reported that while the costs were high—particularly for those who attended private institutions—their degrees were valuable.

> *College is a passport for a job.*
>
> **— Liberal arts graduate**

*It gives you a basic understanding of terminology and procedures in engineering and science that let you learn and expand in the work place.*

**— Engineering graduate**

*My undergraduate degree...prepared me for how to face a challenge.*

**— Liberal arts graduate**

*College teaches you to be aware of choices. It doesn't give you the answers.*

**— Business graduate**

*The experiences have to do more with what I am as a person. I met my husband there, studied abroad. It helps define who you are today.*

**— Business graduate**

*It isn't the degree...the opportunity and experience of going to college is where the value lies.*

**— Liberal arts graduate**

*College teaches you how to learn.*

**— Engineering graduate**

Employees with different academic backgrounds identified why their specific majors or programs of study were valuable to them personally. Indeed, individuals in each of the major groups (business, engineering, and the liberal arts) believed they had benefited from an education superior to that received by those in the other two groups. While liberal arts majors talked in broad terms about possessing the confidence to tackle virtually any problem, engineers reported great faith in the technical foundation they received, and business graduates pointed to the practical nature of their skills.

*I don't think the function of college is to teach me what I am supposed to do in business. Instead, it gave me confidence.*

**—Liberal arts graduate**

*College provided me with the technical know-how I needed to get things done.*

**—Engineering graduate**

*Since my major was management, I had skills for how to approach problems, manage my time, have the right frame of mind.*

**—Business graduate**

Whatever their educational background, these employees typically cited their undergraduate experience as the reason they find themselves where they are today. To them, the experience was worth it—as several of them stated, "whatever it cost."

**...and the Bad**

Despite statements about the overall value of the undergraduate experience, reently employed alumni were quick to offer suggestions for improvement. They complained about low-quality academic and career guidance that left them "lost and floundering" in a maze of curricular possibilities and career options; poor courses or teachers, both of which wasted their time; faculty who lacked hands-on experience; and the lack of courses directly related to the world of work.

**Lost and Floundering.** Employees who used placement services as students reported that they found them helpful. But counseling and placement offices appeared to be a mystery to many degree holders, some of whom didn't know they existed and others who simply never used them. For these students, the undergraduate years were characterized by too little guidance.

> *The first year at college, I just felt lost in an environment of thousands of people, and there was no real guidance. So you just flounder for the first year and try to ground yourself.*
>
> **— Liberal arts graduate**

> *It was just dumb luck that I'm here. I love what I do; I just wish I'd been able to make a more informed decision.*
>
> **— Business graduate**

> *College did nothing to direct my career. I got the job...because of a friend.*
>
> **— Liberal arts graduate**

> *I had no idea what to expect in business. No one prepared me. It was not that my expectations were met or not met. My expectations didn't exist!*
>
> **— Engineering graduate**

> *My school was sorely lacking in trying to get you to focus or [in providing] any kind of guidance.*
>
> **— Business graduate**

**Weak Courses and Professors.** Employees' most caustic comments were reserved for courses, activities, and professors considered to be largely disconnected from the work world and, therefore, a waste of their time.

> *I had a teacher who...came to class with his dog; he was a sexist and ignored women, but they let him teach because he did it for free.*
>
> **— Business graduate**

> *The communications course, the writing course, was just a waste of time. It was just ridiculous. We were asked to make a presentation on how to make a taco.*
>
> **— Engineering graduate**

*I had a professor who didn't work in 25 years. He didn't care about any other area. All that mattered was his very technical finance class, and the message was wrong.*

**— Business graduate**

**Practical Experience and Customized Courses.** A consistent theme among all recently hired alumni—whether they had majored in the liberal arts, business, or engineering—was a desire for more courses offered by professors who had hands-on experience in the business world rather than purely theory-based knowledge.

*Teachers need to be more up to date. They have to [be able] to teach and have practical experience.*

**— Business graduate**

*We should have had more classes taught by professors with real-world experience instead of this academic, theoretical approach.*

**— Engineering graduate**

*Colleges should have more instructors who have more practical experience.*

**— Liberal arts graduate**

*There should be more emphasis on learning from people at companies, rather than from professors who never worked in business.*

**— Business graduate**

Employees also suggested that colleges should offer courses that would prepare students for the requirements of the work world and that would familiarize students with the corporate environment. In particular, they pointed to the need for classes that teach writing skills appropriate for business rather than academic audiences.

"

*Communications courses are important, but not everyone is required to take them. They are not offered in liberal arts schools. It's not easy to turn off flowery writing!*

**— Liberal arts graduate**

*There was too much science and specialization in our curriculum. It would have been helpful to take courses in business.*

**— Engineering graduate**

*They should tailor courses for different disciplines, like calculus for the sciences; calculus for business; financial management for non-financial managers.*

**— Business graduate**

*More blending of liberal arts education with business courses would have been good.*

**— Liberal arts graduate**

*A good course would have been 'modern psychology' or 'how to behave in a hierarchical structure.' Some people behave very differently inside the office versus outside. When you're in college, you're very naive.*

**— Business graduate**

*I learned presentation skills in college, but I had to re-learn them. In college, I gave one presentation in four years.*

**— Liberal arts graduate**

**The World of Work and the Corporate Culture.** Employees also stressed the need for a more serious and comprehensive introduction to the demands of the work world. They suggested more sustained attention to the "nuts and bolts" of corporate life, including an introduction to its politics and norms and an overview of the personal behaviors expected in it; called for more work opportunities; and suggested the use of more case studies and team-building activities.

Above all, recently employed alumni expressed a kind of culture shock at the difference between their experiences as students and their lives as employees. They felt poorly prepared for what they would face in the corporate world; several voiced their surprise at the extent and significance of corporate politics; and most contrasted what they believed had been a collegiate sense of independence with a corporate sense that they were not in charge of their own time or activities.

> *Leadership skills come with experience. In school, you get to choose your teams; not so at work.*
>
> **— Business graduate**
>
> *In college you are expected to discuss and challenge and bring your view to the table, and in your first year in the work place you are expected to listen, learn, and follow instructions.*
>
> **— Liberal arts graduate**
>
> *My biggest problem was time management. I never really understood what the time demands would be until I started work.*
>
> **— Engineering graduate**
>
> *In school you're in a vacuum, but in business what you do or don't do affects someone else. They don't teach you that.*
>
> **— Business graduate**
>
> *College doesn't prepare you much for the ambiguity.*
>
> **— Liberal arts graduate**
>
> *College didn't prepare you for dealing with all kinds of diversity.*
>
> **— Business graduate**

Recently employed alumni were quick to point out that many of the skills they learned in college were developed through extracurricular activities and work

experiences rather than in the classroom. Nearly every employee stressed the need for more meaningful work opportunities as part of the undergraduate experience; work-study programs, internships, and part-time and summer work all received strong support.

> *Ten percent of what I learned came from coursework. The rest came from extracurricular activities and living away from home.*
>
> **— Liberal arts graduate**

> *We got the technical know-how but not the understanding of how to really apply these tools on the job. Course-related work, internships, work-study programs, and summer jobs—they really prepare you for work.*
>
> **— Engineering graduate**

> *Summer internships could have been required that forced you to think about what you liked to do in the work place.*
>
> **— Liberal arts graduate**

> *You have to link the real world with academics, and that's when you get the most out of college.*
>
> **— Business graduate**

> *The extracurricular activities helped. They put you in a position of leadership [and taught you] how to respect people in higher authority, [how] to work with teams/peers, how to use your influence. These are the things that helped prepare me for the business world.*
>
> **— Liberal arts graduate**

> *Colleges should...build these [internships] into the curriculum, to talk about the real world. Internships should be mandatory.*
>
> **— Business graduate**

The employees also expressed a desire for more formal opportunities to work in teams and for the use of practical case studies.

> *Team building came from being an R.A. [resident assistant]. I learned teamwork [on the job].*
>
> **— Liberal arts graduate**
>
> *Team activities get you beyond theory. You get a chance to develop skills like leadership, negotiation, and working with others.*
>
> **— Engineering graduate**
>
> *Case studies help set a real-world context, and they show how all of the pieces fit together.*
>
> **— Business graduate**

**Valuable Insights**

Although some alumni acknowledge that they did not take advantage of all of the campus services available to them, institutional leaders would be wise to listen to the comments recent graduates are making about the gaps between the skills they developed in college and those they have found most useful in the business world. In pointing to the importance of team projects and leadership opportunities and the need for serious and sustained attention to internships, these employees are making precisely the same point as many academic and corporate leaders about needed improvements in undergraduate education.

New employees have valuable advice to offer the institutions—advice that is grounded in a sense of what is needed to earn a living, not in abstract theories about academic administration or the makings of sound curriculum. Although each student's academic experience is unique, colleges could derive great benefits by pursuing similar conversations with their recently employed alumni.

## THE VIEWS OF RECENT GRADUATES

In interviews conducted by five participating corporations, employees hired recently (generally within the last five years) affirmed the value of their college experiences and frequently noted that they had not taken advantage of all of the campus services that had been available to them. They often were able to identify specific experiences and opportunities that had been especially useful in preparing them for work; however, they were equally able to describe shortcomings in their preparation.

Specifically, recent graduates complained about:

- poor guidance in terms of both academic and career options that left them "lost and floundering";
- poor courses and professors who focused on lectures, rote memorization, and "busy work";
- faculty members with little practical experience in the business world who, consequently, were unable to customize courses to meet corporate needs; and
- poor education regarding the demands of the corporate world, including its politics and organizational culture.

Like corporate and academic respondents, most recently employed alumni also emphasized that many more opportunities for work experience—in the form of internship, work-study, and cooperative education programs—should be made available as part of the formal college curriculum.

# V. Spanning the Chasm

The information derived from our interviews with corporate and academic leaders, as well as recently employed alumni, evokes an image of two continents separated by a chasm. The ground underneath the "business continent" shifts from time to time, necessitating rearrangement—and sometimes even rebuilding—of the structures above. The ground underneath the "higher education continent" shifts less frequently and less intensely, but movement does occur, often as the result of tremors in the layers underlying the business continent.

A somewhat shaky bridge allows for passage between the two continents. Most of those traversing the bridge are students who are leaving behind their life on college campuses to become corporate employees. But others, including researchers, faculty, and staff, also make the journey. Many students will return to the higher education continent for short periods of further study, but they need high-quality preparation before their initial journey to help ensure a successful sojourn into the business world. Because personal strengths are critical for smooth passage, some inhabitants of both continents are realizing that the quality of preparation for the journey needs to be improved.

What knowledge and skills should travelers carry with them? To help students prepare adequately, inhabitants of college campuses and the business world need to discuss what each land is like, what preparation is required, and what can be gained once the destination is reached. And as the continents continue to shift, inhabitants of both lands will need to periodically reassess the stability of the bridge.

**Strengthening the Bridge**

Inhabitants of both continents need to work together to help ensure that students are adequately prepared for the journey, but improving the situation does not require elimination of the chasm. Business and higher education are two different enterprises with two separate cultures, and each will benefit when the other works to its full potential. Throughout Forum interviews, both business and higher education representatives expressed a desire for members of the other sector to better understand their special needs and missions. Enhancing understanding and respect of each sector for the other is sure to help strengthen the bridge between the two continents, leading to many benefits for both business and higher education.

To accomplish this goal, interviewees repeatedly recommended that business and higher education representatives meet regionally to discuss goals, values, problems, and ways of seizing mutually advantageous opportunities. During such discussions, both business and higher education representatives are likely to criticize one another.

In Forum interviews, higher education respondents complained that businesses:

- propose major changes in short time frames;
- provide vague descriptions of the skills and knowledge they seek in new employees;
- send inconsistent messages from different parts of the organization;
- fail to understand the difference between education and training; and
- focus too much on profit.

Meanwhile, business leaders complained that those in higher education:

- lack a willingness to change in any time frame;
- have narrow views of disciplines;

- fail to consider career needs;
- expect support without accountability; and
- operate inefficiently.

All of these issues and perhaps others need to be vented and discussed, but they should not constitute the end of the conversation. As they talk about their differences, business and higher education representatives also will discover similarities. In time, mutually beneficial projects can be developed if the groups commit to working together. In this way, the bridge across the chasm can be strengthened, widened, and smoothed. Then, the preparation of the traveler—both inside and outside the classroom—can be better defined and made more efficient.

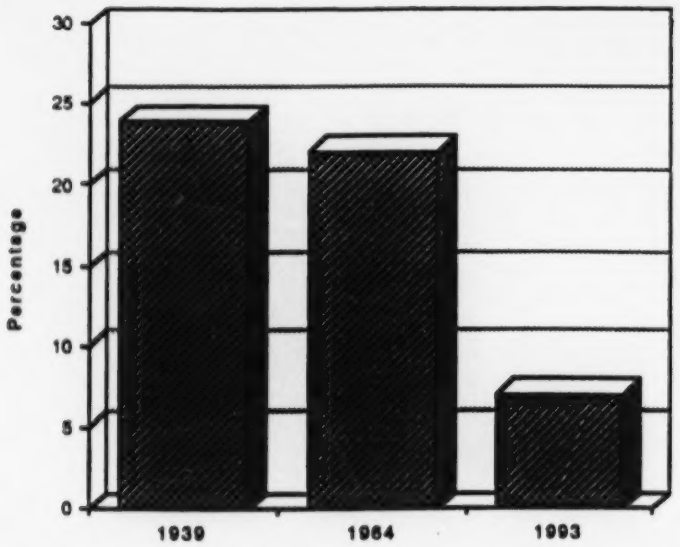
**Inside the Classroom**

Many business leaders assume that today's graduates have taken courses similar to those that characterized their own undergraduate experience; but, in fact, the core curriculum required of students varies widely even among institutions. Recently, the National Association of Scholars conducted an analysis of changes in the general education requirements of 50 colleges. Figure 2 displays the average percentage of graduation requirements made up by mandatory courses.

The proportion of the curriculum devoted to general education has declined substantially since 1964. During the same time period, the number of mandated courses and the percentage of courses requiring a prerequisite also have declined, but the number of courses offered by institutions has increased dramatically. In 1964, the typical college offered 739 undergraduate courses; today, it offers 1,418. Almost all of this increase can be traced to expanded offerings in the humanities and social sciences.

**Figure 2**

**Mandatory Courses as a Percentage of Graduation Requirements**




**Source:** National Association of Scholars,1996

Because today's undergraduates can choose from such a wide variety of courses, the classroom preparation of each student planning a journey from the continent of higher education to that of the business world is different. Understanding what these students typically have in their portfolio of courses will facilitate discussions about possible improvements in their preparation for travel between the two continents.

**Outside the Classroom**

Business leaders, higher education representatives, and recently employed alumni all agreed that extracurricular experiences added significantly to a student's undergraduate education. These activities, as well as internships, cooperative education experiences, and apprenticeships, enable students to learn skills

valued by employers. Interviewees also stressed the need to use group work and case studies within the classroom to teach students how to apply theory to real-world situations.

Ties between business and higher education need to be strengthened if students are to be best prepared for the world of work. Although models of cooperation between the two sectors are somewhat scarce, interview teams did discover some excellent examples of such efforts. These programs include using external advisory groups, changing the curriculum in existing courses, and developing internship and cooperative education experiences.

**Using External Advisory Groups**. Colleges and universities have used external advisory groups for several years. As early as 1985, 85 percent of higher education institutions reported that they conducted joint meetings and advisory panels with business.[8] Institutions most likely developed these panels as a means of gaining corporate financial support rather than as a means of specifically discussing curriculum needs. However, as one faculty member remarked, "We are now beginning to take advisory groups seriously and [to] make changes in our curriculum based on their advice."

For example, the Rutgers University Undergraduate Education Advisory Council, which draws its members from both inside and outside the institution, provides university leaders with information about employment marketplace trends and skills necessary for successful career advancement. Based on this information, the group suggests potential changes in undergraduate education requirements.

**Changing the Curriculum in Existing Courses.** Participants in several institutional interviews noted that they had made changes in the curriculum in response to advice from local business groups. These changes ranged from shifts in the technology used in courses to alterations in curricular content. In a few

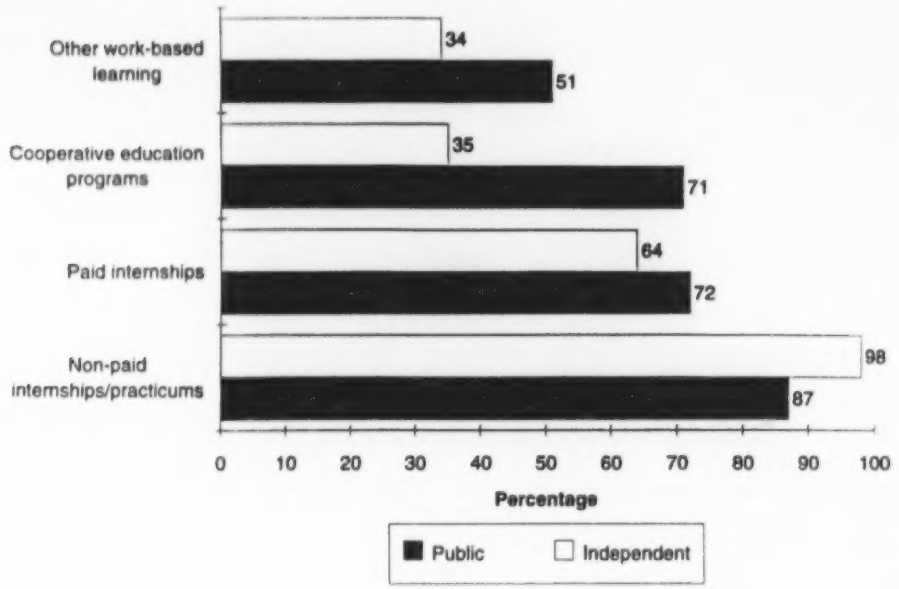
programs, faculty members have begun to assign team projects with team grades, to give students simulated real-world problems to solve, and to require more frequent oral presentations. A particularly effective example of a newly developed curriculum has resulted from a partnership between The Chase Manhattan Bank and Polytechnic University. The class, "Risk in the Life of a Trade," was designed to familiarize participants with the operational risks involved in a financial trade. Both Polytechnic University graduate students and Chase employees participated in the course.

At Lehigh University, engineering, business, and industrial arts students form interdisciplinary teams through the institution's Integrated Product Development Program. These teams are matched with an industry partner to solve a particular business challenge, from identifying target markets and determining customer needs to developing, prototyping, and testing a detailed product design. During this two-semester program, student participants develop project and time management, team communication, and leadership skills.

**Developing Internship and Cooperative Education Experiences.** Internship and cooperative education programs are used extensively at some institutions. Figure 3 reflects the percentage of institutions that reported they had an internship or cooperative education program on their campus in 1996. No one interviewed by Forum teams made negative remarks about the value of such experiences, but a number of people did comment that such opportunities were available to too few students. The percentage of students within the surveyed institutions who were able to participate in such programs is unknown.

The bridge between the higher education and business continents can be strengthened, but the preceding examples are only the beginning of the process. Business and higher education leaders must continue to work together as they seek to respond to the continually changing conditions of today's global economy.

**Figure 3**
**Percentage of Institutions Offering Internship or Cooperative Education Programs**




**Source:** American Council on Education, *Campus Trends 1996.*

**Recommendations**

The major result of this study has been to identify the chasm between higher education and business and to clarify the values of these sectors. However, many corporate and higher education leaders already recognized the need for a smooth and efficient journey for students entering the world of work and expressed considerable motivation to improve the situation. Such improvement can be made only by identifying and taking specific action. The Business-Higher Education Forum therefore recommends the following steps, first for its members and then for other businesses and higher education institutions:

- Convene regional groups of leaders from business and higher education to discuss how the issues presented in this report apply to their local areas and which recommendations for action they can implement.

- Develop ways to bring faculty together with corporate leaders so faculty members can learn about businesses' needs and business leaders can learn what faculty members already do to prepare students for the work force.
- Identify cooperative efforts involving business and higher education that have successfully influenced work-force preparation, and model future programs on successful examples. (See the Business–Higher Education Forum's web page at http://www.acenet.edu/programs/BHEF/BHEF.html for a list of model programs.)
- Acknowledge, through traditional reward structures, the efforts faculty members and business leaders already are making to improve work-force preparation.
- Explicitly define the skills and knowledge desired in new employees and analyze the learning experiences that facilitate these characteristics.
- Evaluate efforts to improve worker preparation by asking recently hired graduates how effective they believe their preparation to have been.
- Define the kinds of education and training that are the responsibility of colleges and universities versus those that are the responsibility of the corporation. While larger corporations may be willing to invest in training programs to teach new employees knowledge unique to their firms, small and medium-sized businesses are likely to require more assistance with training.
- When appropriate, include other participants, such as state and local government representatives and officials from non-governmental agencies, in these discussions.
- Ensure that students have access to information about careers and the educational experience needed to be successful in their chosen fields by providing internships, work experiences, and counseling and advisement services.

- Establish more developmental work opportunities for students during their undergraduate education.
- Recognize the continued learning needs of employees as curricula are defined and learning opportunities developed.

Both business and higher education institutions can contribute to these efforts. Which sector initiates the conversation is unimportant; what is critical is that representatives from both sides—even those individuals who initially might not consider themselves important players—participate in the process and that this process continues over time.

American colleges and universities are a major resource for preparing the nation to meet the challenges of the future. However, if they do not respond to the changing needs of the business world, corporate leaders explained that they will be forced to rely on their own educational systems to train employees. Today, an old challenge presents itself in a new form: Are university graduates prepared to make their way in the modern world? In addressing this challenge, we must remember that our colleges and universities have succeeded in the past, and they shall again.

## COMBINING THE VIEWS

In Forum interviews at ten corporations and 12 higher education institutions, nearly every participating leader from business and academe expressed a desire to be better understood by members of the other sector. Several other findings also emerged from these discussions.

- Change is the force that drives both higher education institutions and businesses. While the actions of colleges and universities typically are driven by fiscal constraints and responsibilities, businesses are influenced by several other external pressures as well.
- Community colleges are more attuned to the needs of business than are other higher education institutions. However, colleges and universities of all types and sizes educate students who enter the work force.
- People in specific professions (e.g., engineers)—whether in higher education or business—form alliances with the corporate world that facilitate communication.
- In contrast, liberal arts faculty, who have significant contact with all types of students, typically have little or no exposure to business.
- Recently employed alumni generally agree with business leaders' evaluations of needed improvements in the college experience.

Although business and higher education are two different enterprises with distinct missions, they share a mutual goal of improving the transition of students from campus to the work place. To work together toward this goal most effectively, the groups need to be aware of their differences and yet focus on their similarities. As business and higher education leaders work together, they will be able to refine their goals and develop strategies to meet the education and employment needs of today's continually changing world.

# Endnotes

[1] The ten corporations were Andersen Worldwide, AT&T, The Chase Manhattan Bank, Federal Express, Ford Motor Company, General Electric Company, Hallmark Cards Incorporated, McDonald's, Motorola, and Xerox.

[2] At one corporation, the executive vice president took the place of the CEO in meetings with the Forum team.

[3] The 12 colleges and universities were Bellevue Community College (Washington); Columbia University (New York); Kennesaw State University (Georgia); Lehigh University (Pennsylvania); Rutgers, the State University of New Jersey at New Brunswick; Sinclair Community College (Ohio); California State University–Long Beach; Swarthmore College (Pennsylvania); the University of Michigan; the University of Illinois at Chicago; the University of Texas at Austin; and the University of Virginia.

[4] See, for example, *America's Choice: High Skills or Low Wages?* Rochester, NY: National Center on Education and the Economy, June 1990; and *Learning a Living: A Blueprint for High Performance*. Washington: The SCANS Commission, April 1992.

[5] Adapted from a table developed by Kenneth P. Voytek, director of economic research, National Alliance of Business, reproduced in *Workforce Economics*, Vol. 2, Issue 2, June 1996.

[6] Arlene O'Sullivan. "Exploring How Well Higher Education Prepares Students for the Work Force." New York: Chase Manhattan Bank, Regional Bank, Marketing Research, November 1995; and Ronald Zolno. "Shell Oil Company & Business–Higher Education Forum Focus Group Study: Top Line Findings." Austin: Zolno Market Research, May 1996.

[7] *Spotlight*, 15 November 1995. Special Report: Job Outlook '96; see Table 8. Bethlehem, PA: National Association of Colleges and Employers.

[8] El-Khawas, Elaine, and Linda Knopp. *Campus Trends 1996*. Washington, DC: American Council on Education.

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## About the Forum

The Business–Higher Education Forum (BHEF) is a membership organization of academic and corporate chief executive officers formed by the American Council on Education (ACE) in 1978 to address and publicize issues of mutual concern to the corporate and higher education communities. Members recognize that higher education and business are becoming increasingly interdependent—colleges and universities produce the human resources to fuel the future economy while corporations apply these human resources to the production of goods and services.

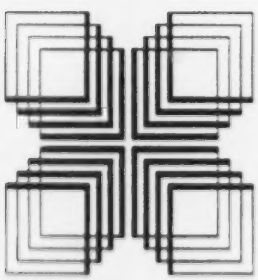
Throughout its history, the Forum has addressed this interdependence by focusing on issues where the cooperative efforts of business and higher education can have positive results. In recent years, Forum members have addressed such critical issues as education and training reform, economic competitiveness, research and development partnerships, science and technology, and global interdependence.

The Forum currently is focusing on how American businesses and higher education institutions can work together to develop high-performance work places and the personnel required to staff them. Toward this end, the Forum's Task Force on High-Performance Work and Workers is examining how well today's college graduates are prepared to meet the demands of the modern work place.

The Forum works to bridge the gap between the corporation and the campus while preserving the unique, traditional roles of each. After issues of mutual concern have been identified, members from both the business world and academe work together to share ideas and develop plans for action to benefit both sectors. On many initiatives, members have personally acted to implement Forum recommendations in their own organizations and communities.

These efforts have demonstrated that greater contact between business and higher education strengthens understanding and communication between these two groups, which, in turn, promotes partnerships needed to develop a well-trained work force.

The American Council on Education (ACE) is the umbrella organization for postsecondary education in the United States.



Business-Higher
Education Forum

One Dupont Circle, Suite 800, Washington, DC 20036-1193
(202) 939-9345 Fax: (202) 833-4723
Internet: bhef@ace.nche.edu

In affiliation with the American Council on Education



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